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FAMILY EXPENDITURE IN 1949. PART II

Outlay on Food and Nutrition

1. *Food Expenditure in* 1948 *and* 1949

In Part I of this paper we surveyed, in general, the expenditure of the 64 families that supplied us with a four-weekly household account in 1949. In the present section we shall consider their expenditure on food, and the resulting nutritional intake, in some detail.

In 1948, 65 families had kept an account for us; their outlay on food per person per week amounted to 12s. 4½d. The corresponding outlay by 64 families in 1949 was 13s. 2d. These figures are not, however, directly comparable, since only 44 of the families contributed an account both in 1948 and 1949. Not all even of these latter accounts permit of a straight comparison of expenditure per head, since 7 of the 44 families incurred a change in their structure—through the birth of a child, a death, or for some other reason. Such changes are clearly liable to affect the food requirements per head of a family, since, *e.g.*, the addition of a new born baby will tend to decrease the average consumption per head while the addition of a male adult will tend to increase it: the smaller the family the greater being the effect. The difficulties of comparing the outlay of families that are not identical can be overcome to some extent through standardisation in terms of 'man' values. The values employed by us for this purpose were set out in the first part of this paper, in Table II. The outlay on food per 'man' per week of the 65 families in 1948 was 15s. 8½d. and that of the 64 families in 1949, 16s. 6d. If we consider only the 37 families that had remained unchanged, we find that their weekly expenditure on food in 1948 amounted to 13s. 1½d. per person and 16s. 5¾d. per 'man', whilst in 1949 it was 14s. 1¾d. per person and 17s. 2¾d. per 'man' (Table XV). This represents an increase in the outlay per person of 7¾ per cent, and per 'man' of 4½ per

Table XV

Outlay on Food per 'Man' and per Person

Group of Families		Outlay per Week per 'Man'		per Person	
		s.	d.	s.	d.
Unchanged (37)	1948 ...	16	5¾	13	1½
	1949 ...	17	2¾	14	1¾
All (64) ...	1949 ...	16	6	13	2

cent, the difference arising from the fact that the ‘ man ’ value per person of these families was somewhat higher in 1949 than in 1948. As far as we could ascertain from the figures at our disposal, their income per family had risen on the average by about 5 per cent from 1948 to 1949, largely because in 1949 they included more, and more experienced, juvenile earners than in 1948. Between the autumn of 1948 and the autumn of 1949 increases had occurred in the prices of a number of foods, and, all things considered, a rise in the average outlay on food of between 4½ and 7¾ per cent appears reasonable. As we shall see below, it seems that with this outlay the families obtained in 1949 a nutritional intake that in essential respects was very similar to that in 1948.

In order to get a picture of the distribution of the families within the total ranges of food expenditure of our samples for 1948 and 1949, we have briefly summarized the relevant figures in Table XVI. To make it possible to compare the distribution of non-identical families in the two years, the food expenditure has been calculated per ‘ man ’, the percentage figures showing the proportions of families and of persons that fell within the defined ranges of weekly food expenditure per ‘ man ’.

TABLE XVI

Distribution of Families

Food Expenditure per ‘ Man ’ per Week	1948		1949	
	Families 65	Persons 300	Families 64	Persons 292
	%	%	%	%
Under 12s.	13.8	19.3	4.7	8.9
12/-—15/11¾	33.8	36.3	36.0	39.4
16/-—19/11¾	38.5	33.3	39.0	37.3
20s. and over	13.8	11.0	20.3	14.4
	100.0	100.0	100.0	100.0

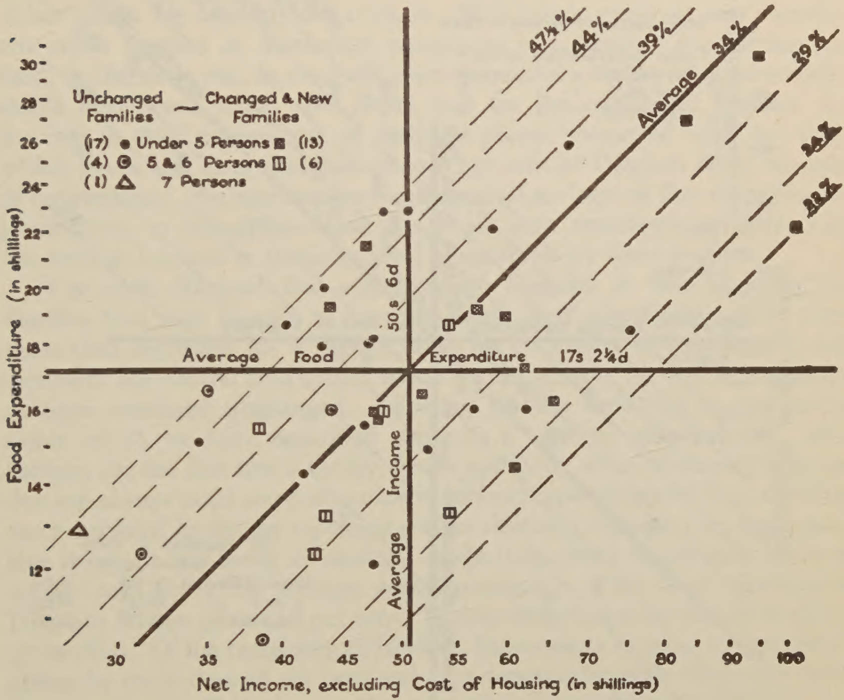
2. *Outlay on Food in Relation to Income*

Only 41 of the 64 families of the 1949 sample stated their income. In dealing with family income we are considering only ‘ net ’ income, which includes, besides earnings, family allowances and pensions, but excludes all deductions at work, such as income tax, compulsory insurances, and trade union contributions. For the purpose of comparing income with expenditure on food we have further deducted from the net income all outlay on housing, since under present-day conditions the cost of housing has to be considered as an inelastic overhead charge, which a family must accept. In order to avoid the unwieldly expression, ‘ net income minus cost of housing ’, we shall in the following employ in its stead the abbreviation I_h.

Diagram A shows the actual I_h and the actual outlay on food of the 41 families, calculated per ‘ man ’ per week. It further gives for each of these families the proportion of the I_h devoted to the purchase of food. The symbols used in Diagram A distinguish between three types of families,

DIAGRAM A

NET INCOME, EXCLUDING COST OF HOUSING, & FOOD EXPENDITURE IN 1949 OF 41 FAMILIES
Per 'Man' per Week (Logarithmic Scales)



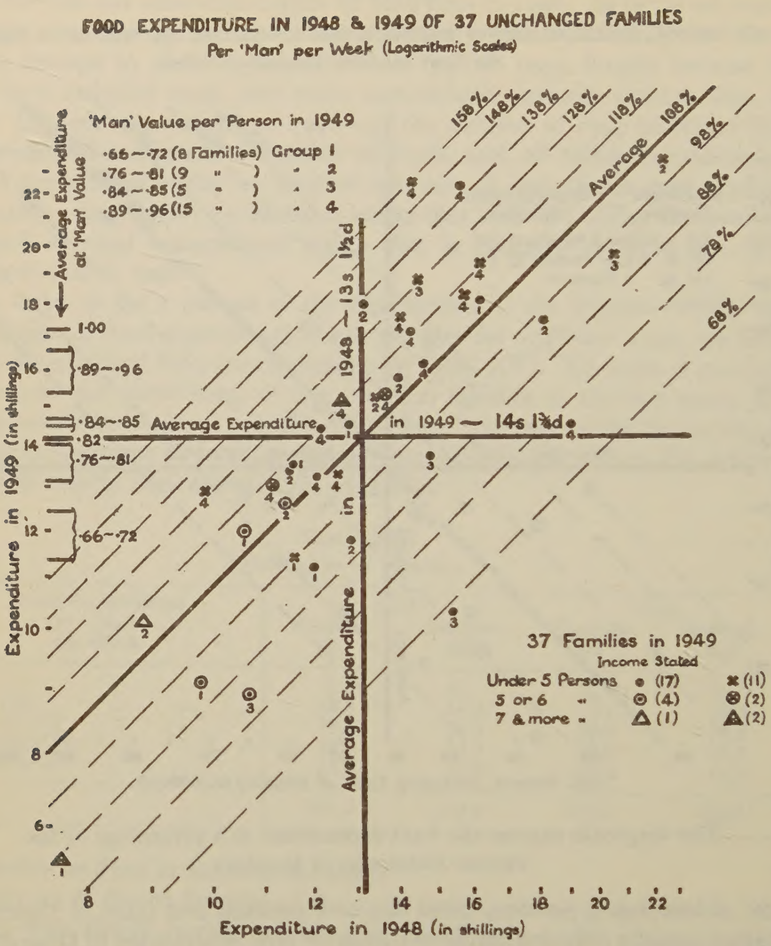
The diagonals express the food expenditure as a percentage of the income *minus* cost of housing.

those of less than 5 persons, those of 5 or 6 persons, and those of 7 persons. There is actually only one family of this latter type represented in Diagram A; but we have given it a distinct symbol since it is an unchanged family, which appears again, under the same symbol, in Diagram B, in the group of the largest families, of 7 and more persons. It will be noticed that this was the only family with a I_h of less than 30s. per ' man ' per week. The lowest outlay on food—under 11s. per ' man ' per week—was recorded by a family with a I_h per ' man ' per week of nearly 40s.; only 27½ per cent of this was spent by the family on food, while the average outlay of all the 41 families absorbed 34 per cent. of their I_h.

3. *Changes in the Outlay on Food*

A comparison of the expenditure on food in 1948 and 1949 by identical families is made in Diagram B. The outlay of each of these 37 unchanged

DIAGRAM B



The diagonals express the food expenditure in 1949 as a percentage of that in 1948.

families has been calculated for both years per person per week. It seemed preferable to use in this instance the natural unit, person, instead of the artificial one, ' man ', since the food requirements of an unchanged family are assessed in the short run more correctly by considering the changes in the physiological needs of the individuals than by the application of an artificial gauge,such as a scale of ' man ' values; for the appetite and the nutritional needs of any particular child or juvenile do not always show a steady increase but are liable to fluctuations over shorter or longer periods. We cannot, of course, really evaluate the impact of such changes on a family's nutritional requirements; but it seems legitimate to assume that, family income permitting, they will be reflected at least to some extent in changes in the family expenditure on food. There are, indeed, many reasons why a housewife's outlay on food can and will vary, even when the family income and the price level of food are steady; but variations in the appetite of the members of her family are certainly one of them. With this in mind we may consider any small upward or downward movement in a family's expenditure on food, in the short run, as a normal phenomenon of a dietary of an essentially stable nutritional value. We found that for the unchanged families the increase in their expenditure on food per person amounted to $7\frac{3}{4}$ per cent, which figure has been rounded off to 8 per cent in Diagram B, for the sake of convenience. We may assume—and we shall see later on that there is some justification in doing this—that this 8 per cent represents approximately the average increase in the price level of nutrition for these families.

The main diagonal that runs through Diagram B thus separates the families that may be said to have improved their nutritional intake, from those that decreased it. A certain range on both sides of the diagonal will represent the neutral area within which we can assume the nutritional intake to have remained unchanged. Allowing for the variations in nutritional needs which we have described above as a ' normal phenomenon ', and, further, for the fact that a family that is not living on an absolute minimum diet can always make some alteration in its food expenditure without affecting the nutritional intake, by replacing certain relatively expensive by less expensive items, or *vice versa*, a ' neutral ' range from about 10 per cent below to 10 per cent above the average, seems reasonable. This range stretches in Diagram B from 98 to 118 per cent. Within these limits we find 21 of all the 37 families. Of the remaining 16 families, 6 showed an increase in their actual outlay by more than 18 per cent and 10 a decrease by more than 2 per cent. Amongst the families whose outlay on food declined substantially from 1948 to 1949 there were, however, two families that even in 1949 spent on food considerably more than the average; in their cases, the reduction in outlay is very unlikely to have entailed an insufficient nutrition. No reason was given by any of the 10 families for their lower food expenditure in 1949; eight of them, however, stated their income, and the proportion of their I_h was in all but two instances less than the average 34 per cent, in the case of 4 of the families very considerably so. A higher percentage was shown by only 2 of these 10 families, one spending on food 18s. 2d. and the other spending 12s. 5d.. per head per week.

The disequilibrium in the distribution of the families above and below the average of 108 per cent in Diagram B may appear rather surprising. It must, however, be understood, that all our averages—the percentages as well as the actual figures—are weighted by the numbers of persons in each family, while no weighting could be applied to the figures for the individual families. The numbers in Diagram B under each symbol indicate the ' man ' value per person of the respective family. The irregular ranges of ' man ' values adopted by us are those that emerged naturally, and which it therefore seemed reasonable to use. The average ' man ' value per person of all the families was 0.82, but it was obtained for none of the families. The inner vertical scale of Diagram B shows the ranges within which the average expenditure in 1949 of the several families would have to fall in order to correspond, for the different groups of ' man ' values, to the average of 14s. 1¾d., for a person of the ' man ' value of 0.82.

4. *Food Consumption and Nutrition*

The consumption of specific foods per person per week is considered in some detail in Table XVII. Items (1) to (8) represent the main first-class protein and the fat foods, and items (9) to (16) all the other foods for which we received reliable quantitative statements. All the foods for which no such statements were obtained are taken together in group (17), which shows the outlay on rabbits, chickens, tinned meat and fish, vegetables, fruit, cooked meals bought away from home, etc. Our figures of nutritional intake from this group are, of course, only approximations. In comparing the actual figures of consumption per head, which are higher for the unchanged families only than for all the families, it should be remembered that our total sample for 1949 contained more young children per family than its sub-sample of unchanged families; hence the food requirements per head of these latter families were, on the average, larger than those of all the families.

It is interesting to notice that the increase in the outlay on food by the unchanged families was almost wholly confined to the foods in groups (1) to (8), which went up by approximately 19 per cent. This, however, was accompanied by an increased calorific value of the foods of these groups, by 12 per cent, on account of the larger fat ration in 1949. Their content of animal protein was practically the same in both years, *viz.*, 28 to 28½ grammes per head per day. The decline in the calorific value and the content of protein in the foods of groups (9) to (16) resulted from a lower domestic consumption of certain inexpensive starchy foods—bread, buns, potatoes—and of dried legumes. One to two slices of dry bread per head per day would have amply made good the deficiency, which, therefore, cannot be taken to suggest a deterioration in the average nutrition. It rather seems likely that with slightly better earnings per family in1949, as compared with 1948, some more snacks may have been bought out of the earners' pocket money, which, of course, remained unrecorded in the accounts kept by the housewives.

Table XVIII sets out the average number of main meals bought per person at work and per child at school; a housewife engaged in part-time work has been counted as half an earner. The prices shown represent the average cost of all the meals in the group for which an outlay was stated; all meals obtained free have been excluded from these calculations. It is probable that not all the meals purchased by the earners were recorded by the housewives. In those instances where the expenditure on such meals was known it was included by us in the figures of outlay on food; when only the number

TABLE XVII. *Consumption of Foods and Nutrition*

	Weekly Consumption per Person						Relative Nutritional Values of Foods					
	37 Unchanged Families				All Fams. (64)		37 Unchanged Families				All Fams. (64)	
	1948		1949		1949		1948		1949		1949	
	Qty.	Outlay	Qty.	Outlay	Qty.	Outlay	Calor.	Prot.	Calor.	Prot.	Calor.	Prot.
		s. d.		s. d.		s. d.	%	%	%	%	%	%
(1) All Meat[1]	13.4 oz.	1 2½	13.5 oz.	1 6½	12.5 oz.	1 5¼	6.0	8.9	6.1	10.8	6.0	9.6
(2) Bacon	1.9 oz.	3½	2.4 oz.	4¼	2.4 oz.	4¼	1.2	0.9	1.5	1.2	1.7	1.3
(3) Sausages	4.7 oz.	4½	5.0 oz.	5¼	4.6 oz.	5	1.4	2.3	1.6	2.7	1.5	2.6
(4) Fish, wet, cured, fried[2] ...	6.5 oz.	6	4.6 oz.	5	4.4 oz.	4¾	1.4	4.9	1.0	3.8	1.1	3.8
(5) Eggs[3]	1.7 eggs	4	1.9 eggs	5¾	2.0 eggs	5¾	0.6	1.8	0.8	2.3	0.9	2.5
(6) Cheese[4]	1.9 oz.	1¼	2.2 oz.	2¼	2.2 oz.	2	1.1	2.3	1.4	3.0	1.4	3.1
(7) All Milk[5]	3.9 pt.	1 6	4.1 pt.	1 7½	3.9 pt.	1 6¼	7.5	12.4	8.2	13.1	8.3	14.2
(8) All Fats[6]	7.4 oz.	6½	9.6 oz.	8¼	9.5 oz.	8	8.8	0.1	12.1	0.2	12.6	0.2
Total (1)—(8)		4 10¼		5 8¾		5 5¼	28.0	33.6	32.7	37.1	33.5	37.3
(9) Sugar	11.0 oz.	3½	11.9 oz.	3¾	11.5 oz.	3½	6.4	—	7.2	—	7.4	—
(10) Jams, Syrup, Honey ...	5.6 oz.	4¾	5.1 oz.	4¾	4.5 oz.	4¼	2.2	0.1	2.1	0.1	2.0	0.1
(11) Bread	68.2 oz.	11¼	65.2 oz.	11½	61.5 oz.	11	25.7	32.6	25.8	33.7	25.6	33.6
(12) Cakes, Buns, Biscuits ...	13.2 oz.	11½	8.9 oz.	11½	7.5 oz.	9¾	7.8	4.5	5.5	3.2	4.8	2.9
(13) Flour	5.8 oz.	1¼	6.0 oz.	1½	5.9 oz.	1½	2.9	3.5	3.1	3.8	3.2	4.0
(14) All Cereals[7]	3.8 oz.	2¾	2.8 oz.	2	2.6 oz.	2	2.1	1.5	1.6	1.1	1.6	1.1
(15) Potatoes	57.7 oz.	6	47.9 oz.	6½	44.0 oz.	6	5.0	5.0	4.3	4.5	4.2	4.4
(16) Dried Legumes	0.6 oz.	0¼	0.3 oz.	0¼	0.4 oz.	0¼	0.2	0.6	0.1	0.3	0.2	0.5
Total (9)—(16)		3 5¼		3 5¾		3 2¼	52.3	47.8	49.7	46.7	49.0	46.6
(17) All Other Foods[8]		4 10		4 11¼		4 6½	19.7	18.6	17.6	16.2	17.5	16.1
Total (1)—(17)		13 1½		14 1¾		13 2	100.0	100.0	100.0	100.0	100.0	100.0
							Calories	Protein gm.	Calories	Protein gm.	Calories	Protein gm.
Total Nutritional Intake per Person per Day :							2650	84	2550	77	2400	73

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[1] Excluding tinned meat not sold by weight. [2] Excluding tinned fish. [3] Including eggs from own hens. [4] Including all special rations and small quantities of cheese rationed on points. [5] Including all milk obtained cheap or free for children under 5 years old and expectant mothers, as well as all kinds of tinned milk (in terms of fresh milk), but excluding all milk obtained by the children at school. [6] Butter, Margarine, cooking fat, suet, dripping. [7] Rolled oats, ready-to-eat breakfast cereals, macaroni, semolina, etc. [8] Rabbits, chickens, tinned meats and fish, tinned, dried, and fresh fruit and vegetables, tea, coffee, cocoa, fancy foods, meals obtained away from home, etc.

TABLE XVIII

Main Meals Away from Home

Group of Families		No. of Meals per Week p. Person at Work[1]	No. of Meals per Week per Child at School[2] Bought	Free	Av. Price per Meal Bought Earner s. d.	Child d.
Unchanged (37)	1948	1.4	2.6	0.6	1 6¼	4¾
	1949	1.3	1.3	2.0	1 4½	5¼
All (64)	1949	1.2	1.1	1.8	1 5	5

[1] A housewife working part-time is counted as half an earner.

[2] From 5 to 15 years old.

of meals but not their cost was stated we took account of the former and disregarded the latter. Several of the housewies, however, thought it likely that some main meals were purchased every week by the earners of their families, but they were unable to supply any precise information on this point; in all these cases no allowance could be made by us for additional meals.

The number of main meals supplied to the children at school amounted on the average to 3 out of a possible 5 per week. It was somewhat surprising to find that although the average number of main meals obtained by the children at school of the unchanged families was practically the same in 1948 and 1949, the number of free meals per child of this group went up from 0.6 to 2 per week. Four of the unchanged families received free meals for their children at school in 1949, but only one of them in 1948.

In Table II (Part I) was given the scale of ' man ' values used by us for assessing the relative cost of maintenance of the individual members within a family; Table XIX presents a related scale of the relative nutritional requirements of individuals, expressed in terms of the requirements of a male adult. This enables us to standardize the figures of available nutrients from the foods consumed in terms of male adult equivalents, MAE for short.

TABLE XIX

Nutritional Requirements

Absolute Requirements per Day	Calories	Protein gm.
Male, 21 years and over	3000	70

Relative Requirements	Calories	Protein
Male, 21 years and over	1.00	1.00
Female, 21 years and over	0.83	0.86
Juveniles and Children :		
17—21 years	1.00	1.29
15—17 years	1.00	1.43
12—15 years	0.97	1.36
7—12 years	0.70	0.93
3—7 years	0.50	0.71
1—3 years	0.37	0.60
6 months—1 year	0.27	0.33
Under 6 months	0.20	0.27

The data in Table XVII gave the nutritional intake per head per day, which for all the families of our sample for 1949, amounted to 2400 calories and 73 grammes of protein. In Table XX these figures are translated into figures of intake per MAE per day and broken down into three sub-totals referring, respectively, to the groups (1) to (8); (9) to (16); and (17), in Table XVII. In discussing the purchases of the foods in these groups we have already emphasized that in spite of the somewhat lower figures of calories and protein for the unchanged families in 1949, as compared with 1948, there was no indication that the diet of these families was more restricted in 1949 than it had been in 1948. This is borne out by the data in Table XX, which show the same figures of intake of animal protein—the protein of the more expensive foods—in 1948 and in 1949, for the unchanged families. The amount of animal protein obtained by all the families of our sample in 1949 was only very slightly below that of the sub-sample of unchanged families, falling short of it by less than a gramme per MAE per day. All our figures of nutritional intake exclude the nutrients obtained from milk at school. Any child attending school could obtain free a third of a pint per school day, or 1⅔ pints per week; but some of the mothers were doubtful whether the milk was always taken by their children.

TABLE XX

Nutritional Intake

Group of Families	Per Male Adult Equivalent per Day					
	Calories		Protein (grammes)			
			Animal		Vegetable	
	Specified Foods[1]	Other Foods[4]	Specified Foods[2]	Other Foods[4]	Specified Foods[3]	Other Foods[4]
Unchanged 1948	2570	630	29	6	41	10
1949	2470	530	29	6	37	7
All 1949	2390	510	28	6	36	6

[1] Nos. (1)—(16) in Table XVII.
[2] Nos. (1)—(8) in Table XVII.
[3] Nos. (9)—(16) in Table XVII.
[4] No. (17) in Table XVII.

5. *Conclusion*

Our survey of the expenditure on food of the families of our sample indicates an increase in the outlay from 1948 to 1949 of about 8 per cent. This was almost as much as the average increase in the price of food shown by the Ministry of Labour index, which between the two periods surveyed by us, amounted to 9 per cent. The purchases of food by the housewives that took part in our survey, yielded somewhat fewer calories and less protein in 1949 than in 1948. This, however, cannot be taken to suggest a deterioration in the diet resulting from the increase in the prices of food, since the decline in the amounts of nutrients occurred not with respect to the most expensive but to the less expensive foods—bread, buns, potatoes, and dried legumes. We do not know why smaller quantities of these foods were bought by the housewives in 1949 than in 1948, but it seems probable that the decline in nutritional intake was only apparent. Our comparable figures were obtained from families that had kept an account in 1948 as well as in 1949, and that had remained unchanged during this period. There were in 1949 more children at work in these families than had been in 1948, while others who had already been earners in 1948 were getting better wages in 1949. It seems at least a possibility that on account of these improvements in income some more snacks or even main meals were purchased by the earners away from home, and that, in consequence, there occurred some decline in their domestic consumption of cheap carbohydrate and protein foods.

T. SCHULZ.

REARMAMENT AND THE U.S. BALANCE OF PAYMENTS

I. Introductory

It has recently been suggested that the maintenance of ' full employment all-around cannot be expected to lead to an equilibrium in international trade.'[1] This thesis has been defended by an analysis which is based on *constant* propensities to import. In the following paper the recent striking change in the U.S. balance of payments will be analysed and the view will be put forward that all evidence points to the fact that *import propensities* (and not merely imports) are a function of the level of employment.

The conclusion of earlier papers about the overwhelming importance of ' over ' full employment policies in creditor countries for international economic readjustment is fully borne out. Orthodox belief in the efficacy of the gold standard appears justified—*provided* the creditor countries 'play the game ' and ' inflate '. Whether this type of readjustment is desirable, whether other, discriminating or similar policies aiming at a redistribution of international income are not ethically preferable is, of course, another question. But the new fashion in favour of flexible exchanges seems definitely a *pis aller* as it is bound to exaggerate the worsening of the terms of the debtor countries, i.e. increase the inequality in the international distribution of wealth. In so far as the ' gold standard ' type of readjustment, i.e. through ' inflation ' in creditor countries relies primarily on *income* effects, and *price* effects *only* come into their own when bottlenecks are encountered, i.e. when the primary and pure income effect has exhausted itself, it is definitely preferable. The turning of the terms of trade against the debtor will be minimised. Quite apart from this, the maintenance of exchange rate stability will reduce risk and thus speed the readjustment by reducing the ' costs ' of foreign trading.

II. The Change in the Overall Balance

In 1948 the United States did not merely have a surplus in relation to Europe but with almost every single major trading area. In 1948 the total American foreign surplus on goods and services amounted to \$6.7 billion. Apart from Europe (\$3.6 billion) Canada and Newfoundland showed a deficit of \$.4, Latin American \$1.2 and other countries \$1.3 billions. Even if \$4.8 billion unilateral transfers are taken into account the non-American world experienced a drain of almost \$2 billion on its gold and dollar reserves.

The position was even further aggravated in the first half of 1949 when the current surplus attained the level of \$3.8 billions i.e. an annual rate of \$7.6 billions. Unilateral transfers, however, increased substantially so that the rate of deterioration of the position of foreign countries was not accelerated. In the third quarter of 1949 the picture began to change. In that quarter, i.e. *just before* devaluation, exports from America were cut by some

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[1] W. F. Stolper, 'The Multiplier, Flexible Exchanges and International Equilibrium,' Quarterly Journal of Economics, November, 1950.

TABLE I

United States Exports and Imports of Goods and Services, by area, 1937 *and* 1947–50
(*Billions of dollars*)

Area	1937	1947	1948	1949	1950[1]
Exports of goods and services[2]					
E.R.P. countries	1.60	7.22	5.92	5.40	4.50
E.R.P. dependencies	.18	.93	.86	.93	.57
Europe, except E.R.P. countries	.13	.56	.27	.21	.19
Canada and Newfoundland ...	2.64	2.69	2.49	2.57	2.7
Latin American republics		4.82	4.27	3.61	3.8
Other[4]		3.58	3.28	3.24	2.4
Total exports	4.55	19.80	17.09	15.96	14.35
Imports of goods and services[2]					
E.R.P. countries	1.33	1.79	2.27	2.26	2.75
E.R.P. dependencies	.50	.59	.76	.73	0.92
Europe, except E.R.P. countries ...	.15	.23	.24	.18	.22
Canada and Newfoundland ...	2.29	1.52	2.05	2.02	2.43
Latin American republics		2.73	3.10	2.95	3.56
Other[4]		1.43	1.94	1.57	2.21
Total imports	4.27	8.29	10.36	9.72	12.14
Export surplus of goods and services[2]					
E.R.P. countries	0.28	5.43	3.65	3.14	+1.74
E.R.P. dependencies	—.31	.34	.10	.20	—.34
Europe, except E.R.P. countries ...	—.03	.33	.03	.03	—.03
Canada and Newfoundland ...	.34	1.17	.44	.55	+.27
Latin American republics		2.08	1.17	.66	+.27
Other[4]		2.15	1.34	1.67	+.26
Total export surplus	0.28	11.51	6.74	6.24	+2.1

[1] Estimates based on incomplete data ; fourth quarter by Council of Economic Advisers.
[2] Includes income on investments.
[3] Not available.
[4] Includes international institutions.
Note.—Detail will not necessarily add to totals because of rounding.
Sources : Department of Commerce (except as noted).

25 per cent. This continued in the fourth quarter. Thus the current surplus shrank rapidly to $2.4 billions in the second half of 1949. This improvement of the position of the outside world continued at an accelerated pace in the first half of 1950 when the surplus of goods and services (excluding unilateral transfers) was reduced to $1.4 billion i.e. an annual rate of $2.8 billion. Unilateral transfers, moreover, though reduced, remained at a high level. The earlier current surplus including unilateral transfer was thus transformed into a deficit of over $0.9 billions i.e. an annual rate of almost $2 billions. The world outside the U.S. began to replenish its depleted liquid reserves.

Since the outbreak of the Korean fighting this development sharply accelerated. Twice in 1950 American imports rose above exports, a position which has not occurred for long years.[1] Their value rose from an average

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[1] At the same time the British visible balance of trade on an f.o.b. basis has shown its first large surplus for some seventy-five years. Cf. the Balance of Payments and Domestic Economic Policy. BULLETIN, February, 1951.

TABLE II

The International Transactions of the United States, 1947–50

(*Billions of dollars*)

Type of Transaction	1947	1948	1949	1950[1]
Exports of goods and services :				
Recorded goods[2]	14.4	12.7	12.0	10.7
Other goods[3]	0.6	0.8	0.3	n.a.
Total goods	16.0	13.5	12.3	n.a.
Services	2.7	2.3	2.3	n.a.
Income on Investments	1.1	1.3	1.3	1.57
Total exports	19.8	17.1	15.9	14,7
Imports of goods and services :				
Recorded goods	5.8	7.1	6.6	9.3
Other goods[3]	0.3	0.7	0.6	n.a.
Total goods	6.1	7.8	7.2	n.a.
Services	1.9	2.2	2.2	n.a.
Income on Investments	0.3	0.3	0.3	n.a.
Total imports	8.3	10.3	9.7	12.1
Surplus of exports of goods and services :				
Recorded goods	9.6	5.5	5.4	1.3
Other goods	0.3	0.1	—0.2	n.a.
Total goods	9.9	5.6	5.2	n.a.
Services	7	—	—	n.a.
Income on investments	9	1.1	1.0	n.a.
Total surplus of exports	11.5	6.7	6.2	2.3
Means of financing surplus of exports of goods and services :[4]				
Liquidation of gold and dollar assets by foreign countries	4.5	0.8	0.1	—3.6
Dollar disbursements by :				
International Monetary Fund	0.5	0.2		
International Bank	0.3	0.2		
United States Government sources :[5]				
Unilateral Transfers	1.9	4.1	5.3	4.0
Long- and short-term loans	3.9	0.9	0.7	0.2
United States private sources :				
Remittances	0.7	0.6	0.5	4
Long- and short-term capital[6]	0.7	0.9	0.6	1.1
Total means of financing	12.5	7.7	7.2	2,1
Errors and omissions	1.0	—1.0	1.0	—0.3

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[1] Estimates based on incomplete data ; fourth quarter by Council of Economic Advisers.

[2] Figures for recorded exports of goods in 1947 have been adjusted to include goods shipped to United States armed forces abroad for distribution to civilians in occupied areas in order to make them comparable with figures for subsequent years. Such shipments are included in exports as recorded by the Bureau of the Census beginning in 1948 but were not so included in prior years.

[3] Includes goods sold to or bought from other countries that have not been shipped from or into the United States customs area and other adjustments.

[4] All figures for means of financing are on a net basis.

[Notes continued at foot of next page.

annual rate of $9.7 billions to not less than $13.2 billions. Exports as we shall see did not fall further. Indeed they expanded slightly. It now seems probable that even the originally planned reduction of Marshall Aid would not, in that year, have significantly altered the picture. The dollar balanc of the world would have been maintained.

The rearmament programme, of course, significantly changed the position. The increase in military aid will much more than offset the decrease in Marshall Aid. Total unilateral transfers by the U.S. are expected to rise to something like $7 billions as against $4.5 billions in 1950. Marshall Aid, however, was directly contributing to the increase in civilian production and thus to the restoration of Europe's international position. The military aid on the other hand will in the main merely represent a partial sharing by the U.S. of the real burden which the European countries will have to shoulder. As such it will enable countries other than America to increase armaments expenditure above what they could have managed without this aid. It cannot however, contribute, as Marshall Aid helped, to a further increase of Western European economic strength. To a large degree it will consist of actual arms. Even if it is given in the form of ' free ' dollars it will be accompanied by an increase in armaments expenditure in the Western European countries.

The increase in arms expenditure, moreover, as the British example shows, will in all likelihood be in excess of American aid. Thus, despite increased U.S. aid, Western European countries will either have to decrease their exports (increase their imports) or will have to cut their standard of life. The net effect of the increase in total aid will, therefore, certainly not automatically mean a strengthening of the dollar viability of the non-American countries. Admittedly the sellers market will continue and to that extent the problem of Western Europe will be eased. On the other hand the worsening of their terms of trade will add to the burden of rearmament.

III. The Changes in the Patterns of U.S. Trade

The pattern of the change in the American trade balance which reduced the American surplus from the rate of some $2.5 billions reached in 1948 on the *average* quarter to a rate of some $700 millions in the first half of last year can best be demonstrated by a breakdown of the American foreign trade figures into main economic groups.

The composition of exports both geographically and according to economic class has undergone considerable changes. The principal drop is represented by crude and manufactured foodstuffs. The decline in grain and milk products exports was especially sharp. Crude material exports on

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[5] Excludes subscriptions to the capital of the International Bank for Reconstruction and Development and the International Monetary Fund.

[6] Excludes net purchases of notes issued or guaranteed by the International Bank consisting of 7 million dollars of long-term and 1 million dollars of short-term notes in 1948, 1 million dollars of long-term notes in the first quarter of 1950, and net sales of 1 million dollars of long-term notes in each of second and third quarters of 1950.

Source : Department of Commerce (except as noted).

TABLE III

United States domestic merchandise exports, by Economic Class, 1936–38 *and Quarterly Average* 1947–50

Period	Total Domestic Exports	Crude Materials	Crude Food-stuffs	Manu-factured Food-stuffs	Semi-Manu-factures	Finished Manu-factures
	Millions of dollars					
Quarterly average :						
1936–38 ...	731	167	34	42	130	358
1947	3791	400	337	439	446	2168
1948	3133	372	316	328	343	1773
1949	2982	445	335	222	339	1641
1950[1]	2522	n.a.	n.a.	n.a.	n.a.	n.a.
1950—First quarter	2350	431	200	140	256	1324
Second „	2478	506	180	151	271	1370
Third „	2411	424	171	156	271	1388
Fourth[1] ...	2850	n.a.	n.a.	n.a.	n.a.	n.a.

[1] Estimates based on incomplete data ; fourth quarter by Council of Economic Advisers.

Note.—Data in this table cover all domestic merchandise shipped from the United States customs area to foreign countries including, in 1947 to 1950, goods destined to United States armed forces abroad for distribution in occupied areas as civilian supplies. Detail will not necessarily add to totals because of rounding.

Source : Department of Commerce (except as noted).

TABLE IV

United States Merchandise Imports for Consumption, by economic Class, 1936–38 *Quarterly Average* 1947–50

Period	Total Imports for Consumption	Crude Materials	Crude Foodstuffs	Manu-factured Foodstuffs	Semi-Manu-factures	Finished Manu-factures
	Millions of dollars					
Quarterly average:						
1936–38 ...	615	190	85	95	126	120
1947	1416	441	254	164	311	246
1948	1773	537	318	183	408	327
1949	1648	463	333	185	355	311
1950[1]	2205	n.a.	n.a.	n.a.	n.a.	n.a.
1950—First quarter	1872	536	423	185	416	312
Second „	1904	513	346	213	480	352
Third „	2344	631	516	275	542	380
Fourth[1] „	2700	n.a.	n.a.	n.a.	n.a.	n.a.

[1] Estimates based on incomplete data ; fourth quarter by Council of Economic Advisers.

Note.—Imports for consumption include merchandise entered immediately upon arrival into merchandising or consumption channels, plus withdrawals from bonded customs warehouses for consumption. Detail will not necessarily add to totals because of rounding.

Source : Department of Commerce (except as noted).

the other hand were maintained and in certain cases increased in value. The fall in exports of semi-finished and finished manufactures (especially capital goods) was appreciable, though less than that of food. As a result of these changes the percentage importance of crude material exports has increased considerably from 10 per cent of total exports in 1947 to 20 per cent in the second quarter of 1950. The importance of the export of crude and manufactured foodstuffs combined in the total declined from over 20 per cent to 13.6 per cent in the same period.

The development of the quantity and value of imports is even more instructive. The quantity increase in crude materials was substantial. There was hardly any change in the volume of import of crude foodstuffs. Manufactured food imports on the other hand increased substantially. By far the largest quantitative increases occurred in semi-manufactures especially in rubber, wood, non-ferrous metals and paper. Finished goods also show a large expansion though this was not wholly reflected in the statistics of the value of imports owing to the spectacular increase in the price of primary commodities.

In 1949 the quantity of imports was still only about 20 per cent above pre-war (1936–8=100) despite an increase in the American real income of over 50 per cent. The average propensity to import had fallen by almost a third as compared with pre-war. During 1950 however the quantity of imports increased by some 20 per cent to 45 per cent above pre-war. Much the greatest increase was experienced in the 4 months after the Korean crisis i.e. from 135 in the second quarter of 1950 to not less than 170 in October 1950. It would be wrong to attribute the whole of the increase to stock piling. The volume of crude materials or even semi manufactures imports increased less than that of finished goods. The volume of the imports of the latter increased from 84 (on the same basis) in 1947 to 103 in 1948 and after falling to 101 in 1949 (in the third quarter of that year they amounted to only 94), they expanded to 126 in the third quarter of 1950 and to 155 (quarterly rate) in October 1950.[1]

Much the most striking geographic change in the United States balance of trade has occurred in respect of the two main raw material producing areas of the world, the Western Hemisphere (excluding Canada) and Asia. With the former a quarterly export surplus of some $447 millions in 1947 and of $24 millions even in 1949 had been transformed into an import surplus of $206 millions in the third quarter of 1950. In the case of Asia a very similar development can be traced. The average quarterly export surplus figures there amounted to $313 millions in 1947, $237 millions in 1949. In the third quarter of 1950 an import surplus of $81 millions appeared.

The E.R.P. countries have similarly substantially improved their dollar balance. In 1947 they showed an average quarterly deficit of not less than $1,150 millions. By 1949 this had been reduced to $807 millons. In the first two quarters of 1950 it was just over $500 millions. In the third quarter it was only $258 millions. The total improvement was all but $1,000 millions per quarter.

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[1] As their prices only increased by 5 per cent the expansion of the value was less spectacular than of some other classes.

Thus an overall balance was achieved in United States international payments. It was the unexpected recovery in the U.S.—despite devaluation and violent cuts of imports from the U.S., which ought to have had a depressing effect on American effective demand—which changed the picture. It is to this problem we now have to turn.

III. Devaluation, Employment and Foreign Trade

It must, first of all, be noted that the *shrinkage* of United States *exports* which had been so violent in the second half of 1949 was reversed after the first quarter of 1950. This was accompanied by a rising price level. This fact alone suggests that the price (or substitution) effects were swamped by the effects of income changes. It was the tremendous increase by more than 30 per cent of the United States *imports* of goods and services (from an annual rate of $9.7 billions in 1949 to an annual rate of $13.2 billions in the third quarter of 1950) which closed the gap. This was accompanied by a *worsening of the American terms of trade* despite devaluation of most of the currencies of scarce raw material suppliers by some 30 per cent.

The conclusion reached on *a priori* reasoning that the state of employment is the decisive factor influencing the balance of payments is borne out by a more detailed analysis of the course (*a*) of the U.S. terms of trade; (*b*) of the relationship of the unit price of imports and exports to their quantity and finally of the total value of imports and exports to the national income.

(*a*) The devaluation of the currencies of the most important trading nations by anything up to a third was expected to turn the *terms of trade* violently in favour of the U.S. This has not happened. Even immediately after devaluation, in the fourth quarter of 1949, when the U.S. recovery was not yet pronounced, there was no improvement in the average relationship between U.S. prices of imports and exports. It might be argued of course

Table V

The Ratio of Export over Import Values
1936–38 = 100

	Total	Crude Materials	Crude Food-stuffs	Manu-factured Food-stuffs	Semi-Manu-factured	Finished Man-factured
1949 I	81.2	104.8	70.6	93.2	81.8	71.2
II	84.0	106.0	76.2	88.0	86.1	71.5
III	82.7	109.9	66.7	85.4	88.3	70.2
IV	82.5	112.5	60.7	81.1	91.1	71.1
1950 I	79.4	111.2	49.3	77.9	93.2	72.7
II	76.0	109.3	43.9	71.8	92.8	70.2
III	72.2	105.2	38.8	80.5	85.3	69.6
October	71.1	100.0	38.2	82.9	82.8	70.5

that devaluation had no time to make its influence felt on the price relationships between the U.S. and the world. But in the first quarter of 1950 the resurgent U.S. recovery began to dominate the scene and overshadowed all other influences. Since then not merely the overall but even the partial terms of trade of the U.S. worsened. In the case of crude foodstuffs the decline is remarkable.

The yearly figures for the overall terms of trade moreover show a steady worsening of the U.S. not merely since the beginning of 1950, but since 1947 (despite Marshall Aid which must have buttressed them).[1]

TABLE VI

U.S. Terms of Trade

	1936–38=100
1947	88.3
1948	85.1
1949	82.6
1950[1]	75.4

[1] Average of 10 months.

(*b*) The development of the relationship between the *price* and the *quantity* of imports and exports is similarly heterodox. *Exports* fell most sharply between the second and third quarters of 1949, i.e. well before devaluation, and recovered since the first quarter of this year. At the *same time* the *price* of U.S. exports also recovered. The course of *imports* is much the same though the fall began slightly earlier and was less. Only in the fourth quarter of 1949 was an *increase* in imports associated with a *fall* in their price. In the beginning of 1950 (i.e. already before the violent increase in stockpiling) imports rose with rising import prices.

The relationship between national income and imports shows violent fluctuations. This disposes of all the mechanical models of foreign trade, so fashionable of late, which are without exception based on constant propensities.[2]

In Table VII we have set out in detail the relations between American national income and imports. In the short run the relationship seems wholly unstable. In the longer run the underlying factors change and with it the meaningfulness of these functions. The average ' propensities ', as could be expected, are relatively less haphazard but even they show wide variations. Moreover we see that the marginal propensity to import i.e. the relationship between increases in national income and imports is much larger as American employment increases or at least, at very high levels of employment.

Admittedly the precipitate increase of imports (especially in the imports of crude raw materials and semi-manufactures) which has been proceeding since the Korean war must to a large extent be due not to a change in the basic relationship between imports and national income but to the ruthless stock piling programme of the American Government i.e. to a once-for-all

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[1] The fact that manufactures form an increasing part of total exports (55 per cent in 1949 as against 49 per cent pre-war) explains this fact only partly.

[2] Cf. BULLETIN, March and April, 1951.

TABLE VII

	Relation between national income and imports (not lagged)		Relation between national income and imports (lagged one quarter)	
	Average	Marginal	Average	Marginal
1948 I ...	.033			
II ...	.030	—.04	.031	
III ...	.030	+.05	.031	+.029
IV ...	.032	+.12	.032	+.085
1949 I ...	.032	+.03	.030	—.117
II ...	.029	+.67	.029	+.043
III ...	.028	+.32	.028	+.036
IV ...	.032	—.39	.032	+.884
1950 I ...	.035	+.19	.035	—.205
II ...	.033	+.01	.035	+.047
III ...	.038	+.12	.041	+.144
IV ...	.042	+.13	.044	+.098
1948 ...	.031	+.04	.032	+.057
1949 ...	.030	+.16	.030	+.211
1950 ...	.037	+.11	.039	+.021

non-recurrent factor. No statistics exist to show how much of this increase can be attributed to this particular source but it would be rash to assume that it is not considerable. In the same way the increase in the imports of crude foodstuffs, another very important contributory cause of the restoration of a balance between American exports and imports, must be attributed to the panic buying movement in the United States which resulted in imports of (e.g. coffee and sugar) of unprecedented proportions.

The increase in the import of finished goods, however, the recovery of which from $290 million in the third quarter of 1949 to over $400 millions in the third quarter of 1950 represents a movement of some 30 per cent and brings clearly to light the work of the permanent balancing mechanism. As full employment is approached, bottlenecks appear and delivery dates lengthen; the demand for imports shifts violently upward. Manufacturers when fully employed cannot resist the increase in imports as they are themselves hard pressed. An increase in prices of foreign supplies does not throw the foreigners out of the market. This indicates that *if* there is any relatively stable relationship at all between imports and the national income its magnitude—like other similar functions—will depend mainly on employment, or to put it in different words the ' propensity ' to import itself is a function of the scale of employment. This is a fact of great importance from the point of view of international economic policy.

IV. OUTLOOK FOR THE FUTURE

Unfortunately there is little but immediate solace in these considerations. No doubt the prospective scale of rearmament of America will entail a very considerable postponement of civilian demand. Thus, even if war did not intervene, effective demand in America will continue to remain on an exceptionally high level. As we have seen from the analysis of the movement of American imports by commodity classes, this by no means would entail a continuation of imports to America at the present level.

True enough raw material shortages have arisen in American markets. With the exhaustion first of sulphur, then of high grade iron deposits, more and more supplies will have to come from abroad, and American competition, at any rate in primary products, will lessen. But as in the case of oil, copper, and some other products in the production of which America is interested on a world wide scale the effective American disbursements abroad will be on a very limited scale as America will provide much the greatest part of the enormous capital resources required for their exploitation and the prime costs of production are, in most cases, relatively low.[1]

It is also obvious that with the recovery of Europe the external dependence of Europe on American crude food exports has dwindled. In the same way the American exports of machinery will not be quite as needed as they were just immediately after the war. The advantages of America in third markets will not any longer derive from the physical impossibility of obtaining machines elsewhere. Thus there is some hope that even though the American ' propensity ' to import will hardly remain at the present level, the position would not substantially deteriorate for some time to come.

In the longer run, however, there seems no reason to change the sceptical view put forward on earlier occasions.[2]

The American production effort which has been relatively stable after its marked decline from the feverish intensity of war-time production is once more showing a very decided rise. It should not be forgotten moreover that exceptionally high increases were achieved in the production of substitute materials. The artificial rubber production capacity has been increasing apace and so have artificial fibres. Thus if all these factors are taken into account, in the long run the ' propensity ' to import of America so far as primary goods are concerned is likely to decrease rather than increase. The chances of maintaining manufactured imports to the U.S. at the present level are not appreciable if under-employment should occur in America.

Conclusion

The events of the last few years show the overwhelming importance—if unilateral grants or ' cheap ' Government loans for the development of poor areas cannot be arranged—of maintaining in a creditor country a state not merely of full but of what is now termed over-full employment : i.e. a state in which demand exceeds home supply. The balancing of current payments will be relatively easy—at a minimum deterioration of the terms of trade of the debtors. This does not mean that discriminatory measures aiming at establishing a large trading area could be foregone. The argument for such measures rests on an enlarged and generalised principle of ' infant ' industries and countries.[1]

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[1] A further note to be published at an early date will attempt to demonstrate the futility of the hope to balance U.S. international payments through increased private investment. The profitability of these investments is such that they serve to add to, rather than solve, the embarrassment of the rest of the world.

[2] Cf. my earlier paper ' The U.S. and the World Economy ', BULLETIN, 1946, pp. 205.

The fact should be emphasised, moreover, that the alternative method of grants and loans as a means of reducing the inequality of wealth, income and opportunity would be preferable. Provided some scheme like Marshall aid were extended to the poorer areas of the world a larger scope for non-discrimination would be compatible with the welfare of less well endowed countries.

The present world tension has given the Western World a breathing space. It is to be hoped that its lessons will be learned before an easing of the political crisis, for which we must hope, once more poses the dollar problem. Belief in the *automatism* of ' equilibrium ' in a normative sense of a desirable state of affairs is bound to lead to renewed crisis. But there is no need to despair if there is consensus of opinion on a *conscious* policy to maintain balance and equity between the countries of the Western World.

T. BALOGH.

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[1] This case cannot be argued here in detail. Cf. my essay on The Dollar Crisis (Blackwell 1949), esp. App. I and II.

INVENTORY GAINS AND THE NATIONAL INCOME

The publication of the new White Paper on National Income and Expenditure (Cmd. 8203) makes it possible to assess to some extent the reliability of our own estimates of the national income in 1950, which were published in the March number of the BULLETIN. In itself an inquest on our results is only of moderate interest (except to ourselves); but the comparison is worth making in some detail, since it brings to light a problem which is of general concern concern to those who make use of national income statistics.

The starting-point of our calculations was an estimate of the national income as a whole, which was built up from separate estimates of the value of output of the main sectors of the economy. For 1950, the official statistics of the different sector contributions in 1949 (given in Table 4 of Cmd. 7933) were taken, and quarterly index-numbers of price and volume were applied to them.[1] The first comparison to be made, therefore, is between the individual sector contributions (and the resulting total) which we arrived at by using this method, and the corresponding figures now given in the new White Paper.[2] A first approximation to this comparison is given in Table IA. On the left-hand side, the figures are those published in the March BULLETIN: on the other side, the White Paper estimates are given net of employers' national insurance contributions[3] (which are now for the first time included in the national income), so as to make the two sets of figures comparable.

TABLE IA

The National Product in 1949 *and* 1950

Sector	BULLETIN estimates				White Paper			Excess of increase shown in White Paper over increase shown in BULLETIN
	1949	1950	Increase	1950 as % of 1949	1949	1950	Increase	
Agriculture ...	590	590	—	100	614	603	—11	—11
Industry	5850	6470	+620	110½	5296	5583	+287	—333
Services	3130	3280	+150	105	3754	3864	+110	—40
Total business ...	9570	10340	+770	108	9664	10050	+386	—384
Government ...	1130	1135	+ 5	100½	1129	1200	+ 71	+ 66
Other	425	470	+ 45	110½	465	522	+ 57	+ 12
Gross Nat. Product	11125	11945	+820	107½	11258	11772	+514	—306

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[1] The methods used in computing these index-numbers have been fully described in articles published in the BULLETIN.

[2] In Table 2. 'Agriculture' in our tables comprises item 1 of this Table; 'Industry' items 2–5; 'Services' items 6, 7, 8, 13 and 14.; 'Government' items 11 and 12; and 'Other' items 9 and 16.

[3] In the case of the first three items, the adjustment is a rough one, since separate figures are not given in the White Paper. For the business sector as a whole the White Paper does give a figure.

TABLE IB

The National Product in 1949 *and* 1950

Sector	BULLETIN Estimates (using new White Paper figures for 1949)			White Paper			Excess of increase shown in White Paper over increase shown in BULLETIN
	1949 (rounded)	1950	Increase	1949	1950	Increase	
Agriculture	615	615	—	614	603	— 11	— 11
Industry	5300	5860	+560	5296	5583	+287	—273
Services	3750	3940	+190	3754	3864	+110	— 80
Total business ...	9665	10415	+750	9664	10050	+386	—364
Government ...	1130	1135	+ 5	1129	1200	+ 71	+ 66
Other...	465	515	+ 50	465	522	+ 57	+ 7
Gross Nat. Product	11260	12065	+805	11258	11772	+514	—291

Table IA is only a first approximation, since the differences between the two estimates partly result from the revisions of the 1949 figures which are given in the White Paper. Had these revised figures been available, we would have used them as a basis, so that the relevant comparison is between the results which we *would have attained* had we done this, and the White Paper estimates. This comparison is set out in Table IB. The left-hand side now gives hypothetical estimates : the percentage increases in the value of output, which were given by our index numbers, and which are shown in Table IA, are applied to the revised figures for 1949 published in the new White Paper, which are rounded off in Column (2). The right-hand side is the same as in Table IA, except of course for the last column.

It can be seen from this table that if the new information relating to 1949 had been available to us, the rise in the gross national product obtained by our methods would have been £15m. smaller, and the divergence between ourselves and the White Paper would have been reduced to that extent. But the improvement is only slight, and the proportionate difference between the two increases is still very great. Moreover, the difference of £291m. is the sum of two opposite differences, one of which partly offsets the other. If we take the ' Business ' sector separately, the discrepancy between the two increases—though reduced by £20m. from the original one shown in Table IA, because of the smaller weight given to Industry—is still almost equal to the total increase shown by the White Paper; the proportionate ' error ' is over 90 per cent.

If this discrepancy were the result solely of defects in our methods of estimation, our discomfiture would be great, and our reputation seriously tarnished. Fortunately this is not the case : it is clear that the discrepancy is very largely—if not entirely—accounted for by an important conceptual difference between our own treatment and that adopted in the White Paper. To say this is not of course to claim absolute reliability for our estimates; given the information at our disposal, we should be extremely lucky to arrive at exactly the right answer. But although there can be no doubt that gaps in our information, and consequent errors in estimation, would explain a small divergence between the two sets of data, they are in this instance at best only a very unimportant part of the explanation. It is not even certain that if we had had more information we should have arrived at a smaller increase in the national product. One example may be cited The new White Paper gives a breakdown of the Services sector, and shows Transport and Communications, Distributive Trades, and Other Services separately. It is clear from these figures that in arriving at our estimates fo this sector we gave too large a relative weight to Other Services. The use of more appropriate weights, however, would actually have given us a *large* increase in output for Services, and would therefore have made still greate the divergence from the increase shown in the White Paper. There is then no good reason for believing that more complete information, with a consequent gain in accuracy, would inevitably have led us to results substantially closer to those shown in the White Paper.

The discrepancy is in fact due to different assumptions concerning changes in factor cost during 1950. If we take the Industry and Services sectors (Agriculture being quantitatively unimportant), our quarterly estimates implied a small rise in factor cost over the course of 1950. In th case of Industry, the price-index (or factor cost index) used was based o data relating to hourly earnings (roughly corrected for changes in productivity), certain wholesale prices, and export prices. A correction was mad (which will be referred to later) so as to allow for the effect on these thre series of changes in import prices. During the first three quarters of 195 this index was very stable, and only in the last quarter, during which ther was a perceptible increase in wage-rates, did it rise significantly. If w compare the year as a whole with 1949, the estimated rise in factor cost wa about 2 per cent. In the case of Services, the price index used was a good de more crude; the main factors taken into account were the Interim Index Retail Prices, the wage rate index, and the rise in railway freight charg which occurred during May. Comparing 1950 with 1949 there was an est mated rise in factor cost of about 3 per cent.[1] Neither in these two secto nor in the others did we arrive at any *fall* in unit factor cost; taking the gro national product as a whole, the estimated rise was about 3 per cent betwee 1949 and 1950.

The White Paper, on the other hand, does imply such a fall, at any rate i the industrial sector. Even though the *volume* of output in this sector i 1950, as measured by the Interim Index of Industrial Production, was abo 8 per cent higher than in 1950, the White Paper shows an increase in *val* of less than 6 per cent, implying a fall of 2 per cent in factor cost. Th implied change in factor cost over the rest of the economy is not apparen since no corresponding index exists: the increase in value which the White Paper shows is just under 4 per cent. This difference largely accounts for the most spectacular divergence between ourselves and the White Paper, which concerns the respective estimates of the increase in profits between 1949 and 1950. Table II compares the BULLETIN estimates of the change in the national income and components with the corresponding figures in the White Paper. In both cases the figure for ' Profits and Interest ' claims to be an estimate of ' true ' profits, and to exclude inventory gains (stock appreciation).

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[1] This may well be excessive since the index would be affected to some extent by chan in import prices. As the person responsible for this particular estimate, the author c make this confession without casting aspersions on his colleagues.

Table II again is only a first comparison, and in order to bring out the important difference one would have to adjust the figures on the left-hand side so as to take account of new information published in the White Paper. In this case, however, the adjustment would not merely consist in substituting the revised 1949 figures for the old ones; it would also involve bringing our estimates of wages, salaries, rent and forces' pay into line with those of the White Paper. The difference between the increase which we showed for these items, and the increases shown in the White Paper, may be attributed to errors of estimating on our part.[1] If we had had fuller information, we should have arrived at the same result for wages and salaries, so that our estimate of the increase in net profits and interest would have been smaller by about £150m. It would also have been £15m. lower—since in our estimate net profits appear as a residual item—if we had been able to make use of the new information concerning sector contributions in 1949, as our estimates increased in the gross national product would then have been smaller by this amount (as shown in Table IB). Even after these adjustments, however, there still

TABLE II

The National Income in 1949 *and* 1950

Source	BULLETIN Estimates			White Paper			Excess of increase shown in White Paper over increase shown in BULLETIN
	1949	1950	Increase	1949	1950	Increase	
Wages	4280	4485	+205	4230	4470	+240	+ 35
Salaries	2250	2305	+ 55	2350	2500	+150	+ 95
Forces' Pay	245	235	— 10	246	250	+ 4	+ 14
Rent	470	480	+ 10	483	496	+ 13	+ 3
Profits and Interest	2905	(3425)	(+520)	2922	2932	+ 10	—510
Net Nat. Income ...	10150	10930	+780	10231	10648	+417	—363
Depreciation ...	975	1015	+ 40	1027	1124	+ 97	+ 57
Gross Nat. Income ...	11125	11945	+820	11258	11772	+514	—306

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[1] This is not strictly true in the case of salaries. In the new White Paper the estimates of the salary-bill in previous years have been substantially revised, and a considerably higher rate of increase is now shown. If these estimates had been available to us, our own estimate of the increase in salaries between 1949 and 1950 would certainly have been greater, and therefore closer to the increase shown in the White Paper.

remains a difference of about £345m. between the two estimates of the increase in net profits. Part of this is accounted for by a difference of opinion about the treatment of depreciation, to which reference will be made later; but the main explanation is that the larger increase which we obtained for the gross national product is reflected in a correspondingly higher figure for the increase in our residual item, profits and interest.[1] It is important to isolate this discrepancy, since it cannot be explained by errors in our calculations.

The fundamental divergence between our treatment and that of the White Paper consists in fact in a different conception of profits—or rather, of 'true' profits as opposed to 'inventory gains'. The fall in factor cost which the White Paper shows is in fact a fall in the gross profit margin, and not in unit labour cost. The reason for this apparent fall can only be the rise in import prices. It is clear that the White Paper regards rising raw material prices as leading to higher ' inventory gains ' at the expense of ' true ' profits. The value added in the course of production during any period (i.e. the gross national product) is arrived at by deducting the cost of raw materials *bought* in that period from the value of total sales. We on the other hand have been implicitly treating ' value added ' as the value of total sales *minus* the cost of raw materials *actually used* in the period concerned, which in most cases will have been acquired in an earlier period. The significance of this difference in approach may be illustrated by an arithmetical example. Let us assume that in Period 1 the cost of raw materials to an enterprise is 100, and equal to their cost in the previous period; that these materials are actually used in Period 2; that the materials bought in Period 2 in order to replace them cost 150; and that ' true ' profits bear some definite relationship to total costs (including labour costs, etc., as well as the cost of materials). We may distinguish three possible pricing policies which the firm could pursue : (*a*) it could price the materials used in Period 2 at their original cost; (*b*) it could price them at replacement cost, with a constant *cash* profit margin : or (*c*) it could price at replacement cost, with a constant *percentage* margin. The implications of each of these policies are set out in Table 3, first taking our definition of value added and profits, and secondly taking that of the White Paper.

Only in case 2 (*a*), where the firm prices its raw materials at original cost, is there a difference between our treatment and that of the White Paper. On our definition, the firm's current costs consist of (*a*) labour costs, etc., and (*b*) the cost of the raw materials actually *used* in Period 2, which were bought in Period 1. The fact that the firm has adopted an original-cost pricing policy will mean that the value of its sales is unchanged; and on our definitions its profits are also unchanged. On the White Paper definition the current costs of production have risen, since the raw materials *bought* during period 2 are more expensive. The firm's profits are therefore lower. However, the total value of its raw material stocks is higher at the end of period 2 than it

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[1] On the expenditure side, the difference would appear in the residual item, ' net investment '.

TABLE III

The Effect of Rising Raw Material Costs on Profits

Item	Period 1	Period 2 (*a*) (Original Cost Pricing)		Period 2 (*b*) (Replacement cost, constant cash profits)		Period 2 (*c*) (Replacement cost, with constant percentage profits)	
		Our definition	W.P. definition	Our definition	W.P. definition	Our definition	W.P. definition
Raw Materials ...	100	150	150	150	150	150	150
Labour Costs, etc. ...	100	100	100	100	100	100	100
' True ' Profits ...	100	100	50	100	100	125	125
Total Value of Sales...	300	300	300	350	350	375	375
Total Value added ...	200	200	150	200	200	225	225
Inventory Gains ...	—	—	50	50	50	50	50

was at the beginning, and the difference is credited to the firm as ' profit from the appreciation of stock '.

In 2 (*b*) and 2 (*c*), where the raw materials bought in Period 1 are priced at replacement cost, there is no divergence : There is an inventory gain of 50, and ' true ' profits are the same, in each case. There is still of course a concealed difference of approach. The White Paper's inventory gain is still ' profit from the appreciation of stock '; it arises because the value of the firm's stock of raw materials has risen during the period. The inventory gain on our treatment, however, is implicitly recorded as a realised capital gain; it results from the fact that the raw materials which were bought in Period 1 for 100 are sold in Period 2 for 150. In case 2 (*b*) therefore, although on our view the firm's current costs are only 200, and the value of sales is 350, 'true' profits are still only 100, and the remaining 50, as a capital gain, must be excluded from ' value added ' and therefore from all national income aggregates. Case 2 (*c*) is similar. Here the firm prices its raw materials at replacement cost, and maintains its gross profit at one-half of total current costs, which are higher from its point of view because it has written up the value of the materials it is using. ' True ' profits therefore rise, and so does the share of profits in the total value added. Once again—from our point of view—the firm actually realises a capital gain which must be distinguished from its ' true ' profits.

It must be stressed that it was quite open to us to adopt a method of making our own estimates which (errors apart) would have led us to the same results as these of the White Paper. It has already been mentioned that in the composite price index which was used for calculating the value of output in industry, a negative weight was assigned to import prices, so as to ensure, so far as possible, that the index would only respond to changes in home factor cost. Had we made this correction on the basis of *current* import prices, our price-index would in fact have fallen, and steps were deliberately taken to avoid this. The point may be illustrated by a quotation from our discussion of the price index in the BULLETIN for May 1950. 'For the post-devaluation quarter the effect of a sudden change in material price is to cut implied profit margins unless prices of manufactures immediately respond. Since profit margins should be, and are, calculated for many items on the basis of the cost of the raw material when bought, this implication seems unrealistic, and we have tried to allow for the time-lag between import arrivals and the sale of finished goods by taking for our import price relative the mean of the relative for the past three quarters.'[1] Had we in fact not made this allowance, and used only the import price index for the current quarter, the increase in the gross national product shown in our results would have been about £280m. smaller, so that the difference between ourselves and the White Paper would have been negligible.[2]

The difference between the two estimates of the increase in the national income arises therefore from the fact that two different definitions of profits—and hence of the national income—have been used. The question of which estimate is to be preferred is not an empirical one ; it is a matter of definition—one might almost say, of theology. And there is no doubt that the weight of economic opinion is against us. Most economists would agree with (for example) Dr. Barna that the net national income for any period should be conceived of as 'a maximum which could have been consumed while maintaining the real amount of capital intact'; and that 'it follows that investment is defined as the value of the increase in real assets, and profits as current receipts less the current cost of replacing factors of production used up.'[3] This is precisely the concept which is used by the White Paper; the cost of *replacing* the materials used up in the process of production is deducted from the value of current sales. Our own definition is in fact mentioned (and rejected) by Dr. Barna in his discussion of this very problem of stock valuation : 'The census definition, similarly to the income-tax definition, measures value added by production to original cost and not the excess of value over current replacement cost.'[4] Moreover, in a previous discussion of the same subject, Dr. Barna had pointed out that in a period of rising raw material prices true profits, as correctly defined, would fall if firms generally adopted a policy of original-cost pricing.[5] There can be no doubt that we have unwittingly deviated, and embraced a heresy : we are Census-of-Productionists.[6] Our estimated increase in the net national income, and therefore in the residual items of net profits and net investment, are too great.[1]

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[1] In the original article, the words 'many items' appeared because of an error as 'any item'; the impression of rather loose dogmatism thus unintentionally conveyed is corrected here.

[2] It does not follow, however, that we would necessarily have reached so satisfactory a result. Since our price index had shown an upward bias in the period 1948–49, we might have been reluctant to use it without attempting to correct for this, quite apart from the question of how to allow for the rise in import prices.

[3] *Redistribution of Incomes through Public Finance in* 1937, Appendix B, p. 244.

[4] *Ibid.*, p. 245.

[5] 'The Valuation of Stocks and the National Income,' *Economica*, 1942.

[6] Unwittingly, since we never consciously faced the issue. We simply assumed that in so far as it was current accounting practice to measure profits on an original-cost basis, it was proper for us to do the same. Whether this renders our offence more venial is a matter of judgment.

It is not clear, however, that the present treatment of ' stock appreciation ' in the national income accounts is conceptually satisfactory, though there can be no doubt that the White Paper follows in this respect the generally accepted international practice. Certainly an increase in the value of a given physical volume of stocks should not be included as a part of net investment; but it does not follow that it should be excluded altogether from the main national income aggregates. The present position seems to be anomalous. Net profits are agreed to be what remains after payments to other factors of production have been made, and after a sum had been set aside in order to maintain capital intact—i.e. after depreciation has been deducted. Now so far as fixed capital is concerned, depreciation should be estimated on the basis of the current cost of replacing and renewing plant and equipment. If therefore the prices of investment goods go up, depreciation allowances will (or should) increase *pari passu*. In the case of working capital, however, profits are defined for accounting and income-tax purposes as the amount which remains when the *money-value* of the existing stock has been maintained. It is hard to see any good *theoretical* reason for making a distinction of this kind. (Whether or not there are good practical reasons is another matter). If the cost of maintaining a given volume of stocks increases, this surely ought to be regarded—by the national income accountant at least—as a rise in the current cost of maintaining capital intact[2]; that is, it should be treated as a part of depreciation. To exclude it from net investment, and from the net national income, is quite correct; but it should be included in the gross national income aggregates, and not simply deducted altogether.

The implications of this view may be shown by another arithmetical example. Let us assume again that in Period 1 the materials bought by an enterprise cost 100, and that they cost the same in the previous period; that in Period 2 the cost rises to 150, but in Period 3 it falls back again to 100; that labour costs, etc., and depreciation in respect of fixed capital (which must now be shown separately) are unchanged; that the raw materials bought in any period are actually used in the succeeding period; and that profit margins

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[1] In one important respect, however, our consciences are clear, while those of the authors of the White Paper must be very uneasy. It follows from the generally accepted definition of income that depreciation should be estimated on a replacement-cost basis. Changes in the legal depreciation allowances which do not correspond to a change in the cost of maintaining fixed capital should therefore not be reflected, as they are at present, in the figure for depreciation which appears in the national income accounts. In our estimates we deliberately departed from the White Paper's practice in this respect.

[2] The problem of deciding what exactly is meant by the phrase ' maintaining capital intact ' is of course an extremely intricate one. For our purposes we may define it as maintaining the stock of capital required to produce a given physical output. Although, as Mr. Hicks and others have pointed out, a definition of this kind is open to serious theoretical objections—indeed, formulated as crudely as this, it is not free from ambiguity—it is probably the most useful for the purposes of the national income statistician. We may say that working capital is maintained intact if a given volume of stocks is not depleted. To decide whether or not this had happened over a particular period might not be easy; but the difficulties are at least as formidable in the case of fixed capital.

TABLE IV

The Effect of Changes in Raw Material Costs on Gross and Net Profits

Item	Period 1	Period 2	Period 3
Cost of Materials Bought	100	150	100
Labour Costs, etc.	100	100	100
Depreciation in respect of Fixed Capital	50	50	50
Depreciation in respect of Working Capital	—	50	—50
Net Profits...	100	50	150
Total Value of Sales	350	350	400
Value of Gross Output	250	250	250
Value of Net Output	200	150	250

are arrived at by adding a constant cash margin to original cost.[1] The *net* value added is defined as the value of current sales *minus* depreciation (as now defined) and *minus* the cost of the materials actually *used* in the period. This definition of course gives the same results as those obtained by the White Paper, since the difference between the cost of materials bought and the cost of materials used is now treated as depreciation. *Gross* value added equals net value *plus* depreciation.

The consequenccs of this procedure may appear paradoxical. Net output is defined as the total value added to the cost of materials actually *bought*, *minus* depreciation in respect of fixed capital, while gross output is defined as the total added to the cost of materials *used*. The discredited Census of Production definition is reintroduced through a back door. Further, it is possible for net profits to vary while gross profits remain constant.[2] But this seems to be the inevitable result of a consistent treatment of depreciation.[3]

It should be added in conclusion that the practical implications of the argument are in no way revolutionary. It is true that company profits, as at present assessed for income-tax purposes, include a notional inventory gain which on this treatment would be regarded as depreciation, and therefore excluded from net profits. However, there is nothing new in this, since this definition of net profits is the same as that used by the White Paper, and if this were accepted as the legal definition exactly the same results would follow. The most that could be said is that if the extra cost of replacing stocks ought strictly to be regarded as depreciation, this strengthens slightly the argument that it should not be included in taxable profits. But it does not necessarily follow that because a particular way of defining net profits is appropriate for national income accounting, it is also appropriate for income-tax purposes; the two questions are quite distinct.[1] It is true that with the rise in raw material prices this year, and the withdrawal of the initial allowances from next year, the burden of taxation on firms is now becoming heavier than in any previous period. It is also true that there are overwhelming economic arguments against rates of business taxation which make it extremely difficult or even impossible for firms to maintain their capital intact. It does not seem obvious, however, that we have already reached the stage where economic progress is seriously threatened in this way.[2] Moreover, the problem of how severely profits should be taxed is not exclusively an economic one, but has ethical, political and administrative aspects which cannot be ignored. The purpose of this article is not to prescribe policies, but merely to suggest a different way of treating a particular item in the national income accounts.

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[1] This assumption makes no difference to the argument, and is made purely for convenience. If however firms adopted our attitude, and treated any rise in the cost of raw materials as an increase in depreciation, and therefore as necessarily part of current cost, replacement-cost pricing would presumably become the rule. ' Original cost ' is here defined as in Table III.

[2] If we assumed replacement-cost pricing, the opposite would occur.

[3] A further result is that if a firm or an individual makes a living by (for example) buying raw materials and selling them again in a period when prices are higher, the whole of its income consists of ' depreciation '.

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[1] It has been argued for example that depreciation allowances on fixed capital should be estimated on a replacement-cost basis for national income purposes, but that the legal allowances for taxation purposes should be based on original cost. (Cf. Mr. Prest's article in *Accounting Research*, July 1950). Exactly the same argument could be applied to stocks. Mr. Wiles's view (*Accounting Research*, January, 1951), that to fix depreciation allowances on an original-cost basis is 'on the very highest grounds of welfare economics . . . simply wrong', would not command unanimous support among economists.

[2] This is of course a matter of judgment, and one might in any case argue that we cannot afford to risk these consequences. It is difficult however to sympathise with those commentators who argue *simultaneously* that the present level of business taxation is grossly and dangerously excessive, and that a rise in interest rates is needed.